Section 6. Weather Information

2-6-1. FAMILIARIZATION

Become familiar with pertinent weather information when coming on duty, and stay aware of current weather information needed to perform ATC duties.

2-6-2. HAZARDOUS INFLIGHT WEATHER ADVISORY SERVICE (HIWAS)

Controllers shall advise pilots of hazardous weather that may impact operations within 150 NM of their sector or area of jurisdiction. Hazardous weather information contained in HIWAS broadcasts includes Airmen's Meteorological Information (AIRMET), Significant Meteorological Information (SIGMET), Convective SIGMET (WST), Urgent Pilot Weather Reports (UUA), and Center Weather Advisories (CWA). Facilities shall review alert messages to determine the geographical area and operational impact for hazardous weather information broadcasts. The broadcast is not required if aircraft on your frequency(s) will not be affected.

a. Controllers within commissioned HIWAS areas shall broadcast a HIWAS alert on all frequencies, except emergency frequency, upon receipt of hazardous weather information. Controllers are required to disseminate data based on the operational impact on the sector or area of control jurisdiction.

NOTE-
The inclusion of the type and number of weather advisory responsible for the HIWAS advisory is optional.

PHRASEOLOGY-
ATTENTION ALL AIRCRAFT. HAZARDOUS WEATHER INFORMATION (SIGMET, Convective SIGMET, AIRMET, Urgent Pilot Weather Report (UUA), or Center Weather Advisory (CWA), Number or Numbers) FOR (geographical area) AVAILABLE ON HIWAS, FLIGHT WATCH, OR FLIGHT SERVICE FREQUENCIES.

b. Controllers outside of commissioned HIWAS areas shall:

1. Advise pilots of the availability of hazardous weather advisories. Pilots requesting additional information should be directed to contact the nearest Flight Watch or Flight Service.

2. Apply the same procedure when HIWAS outlets, or outlets with radio coverage extending into your sector or airspace under your jurisdiction, are out of service.

PHRASEOLOGY-
ATTENTION ALL AIRCRAFT. HAZARDOUS WEATHER INFORMATION FOR (geographical area) AVAILABLE FROM FLIGHT WATCH OR FLIGHT SERVICE.

c. Terminal facilities have the option to limit hazardous weather information broadcasts as follows: Tower cab and approach control facilities may opt to broadcast hazardous weather information alerts only when any part of the area described is within 50 NM of the airspace under their jurisdiction.

REFERENCE-
AIM, Chapter 7, Section 1, Meteorology, Para 7-1-5 through Para 7-1-9.

2-6-3. PIREP INFORMATION

Significant PIREP information includes reports of strong frontal activity, squall lines, thunderstorms, light to severe icing, wind shear and turbulence (including clear air turbulence) of moderate or greater intensity, volcanic eruptions and volcanic ash clouds, and other conditions pertinent to flight safety.

REFERENCE-
FAAO 7110.65, Low Level Wind Shear Advisories, Para 3-1-8.
FAAO 7210.3, Handling of SIGMET's, CWA's, and PIREP's, Para 6-3-1.
AIM, Flight Operations in Volcanic Ash, Para 7-5-8.
FAAO 7210.3, SIGMET and PIREP Handling, Para 10-3-1.

a. Solicit PIREP's when requested or when one of the following conditions exists or is forecast for your area of jurisdiction:

1. Ceilings at or below 5,000 feet. These PIREP's shall include cloud base/top reports when feasible.

TERMINAL. Ensure that at least one descent/climb-out PIREP, including cloud base/s, top/s, and other related phenomena, is obtained each hour.

EN ROUTE. When providing approach control services, the requirements stated in TERMINAL above apply.

2. Visibility (surface or aloft) at or less than 5 miles.

3. Thunderstorms and related phenomena.

4. Turbulence of moderate degree or greater.

5. Icing of light degree or greater.

6. Wind shear.

7. Volcanic ash clouds.

NOTE-
Pilots may forward PIREP's regarding volcanic activity using the format described in the Volcanic Activity Reporting Form (VAR) as depicted in the AIM, Appendix 2.

8. *TERMINAL.* Braking Action Advisories are in effect.

REFERENCE-
FAAO 7110.65, Braking Action Advisories, Para 3-3-5.
P/CG Term- Braking Action Advisories.

b. Record with the PIREP's:

1. Time.

2. Aircraft position.

3. Type aircraft.

4. Altitude.

5. When the PIREP involves icing include:

(a) Icing type and intensity.

(b) Air temperature in which icing is occurring.

c. Obtain PIREP's directly from the pilot, or if the PIREP has been requested by another facility, you may instruct the pilot to deliver it directly to that facility.

PHRASEOLOGY-
REQUEST FLIGHT CONDITIONS.

Or if appropriate,

REQUEST (specific conditions; i.e., ride, cloud, visibility, etc.) CONDITIONS.

If necessary,

OVER (fix),

or

ALONG PRESENT ROUTE,

or

BETWEEN (fix) AND (fix).

d. Handle PIREP's as follows:

1. Relay pertinent PIREP information to concerned aircraft in a timely manner.

2. *EN ROUTE.* Relay all operationally significant PIREP's to the facility weather coordinator.

3. *TERMINAL.* Relay all operationally significant PIREP's to:

(a) The appropriate intrafacility positions.

(b) The FSS serving the area in which the report was obtained.

NOTE-
The FSS is responsible for long line dissemination.

(c) Other concerned terminal or en route ATC facilities, including non-FAA facilities.

(d) Use the word *gain* and/or *loss* when describing to pilots the effects of wind shear on airspeed.

EXAMPLE-
"Delta Seven Twenty-one, a Boeing Seven Twenty-seven, previously reported wind shear, loss of Two Five knots at Four Hundred feet."

"U.S. Air Seventy-six, a D-C Niner, previously reported wind shear, gain of Twenty-Five knots between Niner Hundred and Six Hundred feet, followed by a loss of Five Zero knots between Five Hundred feet and the surface."

REFERENCE-
AIM, Wind Shear PIREP's, Para 7-1-22.

2-6-4. WEATHER AND CHAFF SERVICES

a. Issue pertinent information on observed/reported weather or chaff areas. Provide radar navigational guidance and/or approve deviations around weather or chaff areas when requested by the pilot. Do not use the word "turbulence" in describing radar-derived weather.

1. Issue weather and chaff information by defining the area of coverage in terms of azimuth (by referring to the 12-hour clock) and distance from the aircraft or by indicating the general width of the area and the area of coverage in terms of fixes or distance and direction from fixes.

2. Issue the level of echo intensity when that information is available.

3. When equipment limitations exist, controllers shall, at a minimum, ensure that the highest available level of echo intensity within their area of jurisdiction is displayed.

4. When a deviation cannot be approved as requested and the situation permits, suggest an alternative course of action.

b. In areas of significant weather, plan ahead and be prepared to suggest, upon pilot request, the use of alternative routes/altitudes.

NOTE-
Weather significant to the safety of aircraft includes such conditions as tornadoes, lines of thunderstorms, embedded thunderstorms, large hail, wind shear, moderate to extreme turbulence (including CAT), and light to severe icing.

c. Inform any tower for which you provide approach control services if you observe any weather echoes on radar which might affect their operations.

PHRASEOLOGY-
WEATHER/CHAFF AREA BETWEEN (number) O'CLOCK AND (number) O'CLOCK (number) MILES,

or

(number) MILE BAND OF WEATHER/CHAFF FROM (fix or number of miles and direction from fix) TO (fix or number of miles and direction from fix),

or

LEVEL (number(s)) WEATHER ECHO BETWEEN (number) O'CLOCK AND (number) O'CLOCK, (number) MILES. MOVING (direction) AT (number) KNOTS, TOPS (altitude),

or

DEVIATION APPROVED, (restrictions if necessary), ADVISE WHEN ABLE TO:

RETURN TO COURSE,
or
RESUME OWN NAVIGATION
or
FLY HEADING (heading)
or
PROCEED DIRECT TO (name of NAVAID). UNABLE DEVIATION (state possible alternate course of action).

EXAMPLE-
1. *"Level five weather echo between eleven o'clock and one o'clock, one zero miles. Moving east at two zero knots, tops flight level three niner zero."*

2. *"Level four weather echo between ten o'clock and two o'clock, one five miles. Weather area is two five miles in diameter."*

3. *"Level four and five weather echoes between ten o'clock and two o'clock, one five miles. Weather area is two five miles in diameter."*

4. *"Level two through four weather echoes between ten o'clock and two o'clock, one five miles. Weather area is two five miles in diameter."*

NOTE-
Phraseology using level number(s) is only applicable when the radar weather echo intensity information is determined by NWS radar equipment or digitized radar equipment.

REFERENCE-
P/CG Term- Radar Weather Echo Intensity Levels.

d. The supervisory traffic management coordinator-in-charge/operations supervisor/controller-in-charge shall verify the digitized radar weather information by the best means available (e.g., pilot reports, local tower personnel, etc.) if the weather data displayed by digitized radar is reported as questionable or erroneous. Errors in weather radar presentation shall be reported to the AF technician and the AT supervisor shall determine if the digitized radar derived weather data is to be displayed and a NOTAM distributed.

NOTE-
Anomalous propagation (AP) is a natural occurrence affecting radar and does not in itself constitute a weather circuit failure.

2-6-5. CALM WIND CONDITIONS

TERMINAL. Describe the wind as calm when the wind velocity is less than three knots.

REFERENCE-
FAAO 7110.65, Tailwind Components, Para 3-5-3.
FAAO 7110.65, Intersecting Runway Separation, Para 3-10-4.

2-6-6. REPORTING WEATHER CONDITIONS

a. When the prevailing visibility at the usual point of observation, or at the tower level, is less than 4 miles, tower personnel shall take prevailing visibility observations and apply the observations as follows:

1. Use the lower of the two observations (tower or surface) for aircraft operations.

2. Forward tower visibility observations to the weather observer.

3. Notify the weather observer when the tower observes the prevailing visibility decrease to less than 4 miles or increase to 4 miles or more.

b. Forward current weather changes to the appropriate control facility as follows:

1. When the official weather changes to a condition which is below 1,000-foot ceiling or below the highest circling minimum, whichever is greater, or less than 3 miles visibility, and when it improves to a condition which is better than those above.

2. Changes which are classified as special weather observations during the time that weather conditions are below 1,000-foot ceiling or the highest circling minimum, whichever is greater, or less than 3 miles visibility.

c. Towers at airports where military turbo-jet en route descents are routinely conducted shall also report the conditions to the ARTCC even if it is not the controlling facility.

d. If the receiving facility informs you that weather reports are not required for a specific time period, discontinue the reports. The time period specified should not exceed the duration of the receiving controller's tour of duty.

e. *EN ROUTE.* When you determine that weather reports for an airport will not be required for a specific time period, inform the FSS or tower of this determination. The time period specified should not exceed the duration of receiving controller's tour of duty.

REFERENCE-
FAAO 7110.65, Forwarding Approach Information by Nonapproach Control Facilities, Para 3-10-2.

2-6-7. DISSEMINATING WEATHER INFORMATION

TERMINAL. Observed elements of weather information shall be disseminated as follows:

a. General weather information, such as "large breaks in the overcast," "visibility lowering to the south," or similar statements which do not include specific values, and any elements derived directly from instruments, pilots, or radar may be transmitted to pilots or other ATC facilities without consulting the weather reporting station.

b. Specific values, such as ceiling and visibility, may be transmitted if obtained by one of the following means:

1. You are properly certificated and acting as official weather observer for the elements being reported.

NOTE-
USAF controllers do not serve as official weather observers.

2. You have obtained the information from the official observer for the elements being reported.

3. The weather report was composed or verified by the weather station.

4. The information is obtained from an official Automated Weather Observation System (AWOS) or an Automated Surface Observation System (ASOS).

c. Differences between weather elements observed from the tower and those reported by the weather station shall be reported to the official observer for the element concerned.